Alfalfa Weed Control in The Low Deserts- 40 Years of Discovery and Innovation

- Characteristics of weeds in the low deserts
- Review herbicide development over the past 40 years.
- Briefly describe new herbicide registrations
Alfalfa Yield
Low Desert Non-dormant Varieties

<table>
<thead>
<tr>
<th>Month</th>
<th>Tons</th>
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</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>0.8</td>
</tr>
<tr>
<td>Mar.</td>
<td>1.0</td>
</tr>
<tr>
<td>Apr.</td>
<td>1.4</td>
</tr>
<tr>
<td>June</td>
<td>1.8</td>
</tr>
<tr>
<td>July</td>
<td>1.2</td>
</tr>
<tr>
<td>Aug.</td>
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</tr>
<tr>
<td>Sept.</td>
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</tr>
<tr>
<td>Oct.</td>
<td>0.6</td>
</tr>
<tr>
<td>Nov.</td>
<td>0.6</td>
</tr>
</tbody>
</table>

UCD Alfalfa Workgroup
Soils Crack and Multiple Emergences
No Distinct Seasons
Over Wintering
Mexican Sprangletop
Poor Cuticle Absorption
Rotational Intervals
Best Weed Control is a healthy well managed crop

- Fertility Management
- Pest Management
- Cutting Management
- Irrigation Management
Herbicide Registrations Low Deserts

Number

Year

60 70 80 90 2008
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>CA/AZ</th>
<th>Year First Registered or expected</th>
<th>Grasses</th>
<th>Broadleaves</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Butoxone</td>
<td>CA/AZ</td>
<td>1959 Y</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Eptam</td>
<td>CA/AZ</td>
<td>1960 N</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Balan</td>
<td>CA/AZ</td>
<td>1965 Y</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Karmex</td>
<td>CA/AZ</td>
<td>1970 Y</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Gramoxone</td>
<td>CA/AZ</td>
<td>1974 Y</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Sencor</td>
<td>CA/AZ</td>
<td>1974 Y</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Kerb</td>
<td>CA/AZ</td>
<td>1978 Y</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Buctril</td>
<td>CA/AZ</td>
<td>1983 Y</td>
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<tr>
<td>Treflan TR10</td>
<td>CA/AZ</td>
<td>1984 Y</td>
<td>●</td>
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<tr>
<td>Poast</td>
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<td>Select/Prism</td>
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<td>Pursuit</td>
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<td>Raptor</td>
<td>CA/AZ</td>
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<td>Roundup</td>
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<td>Prowl</td>
<td>CA/AZ</td>
<td>2005 Y</td>
<td>●</td>
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<tr>
<td>Velpar</td>
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<tr>
<td>AlfaMax Gold</td>
<td>AZ</td>
<td>2006 N</td>
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<td>Sandea</td>
<td>CA/AZ</td>
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<tr>
<td>Chateau</td>
<td>CA/AZ</td>
<td>2009 N</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

- ●: Good Control
- ○: No Control
- ↓: Partial Control

Comments:
- Use of adjuvant enhances activity but increases injury.
- Multiple applications necessary due to losses with water. Will  
  not control established weeds from previous season.
- Crop injury is common when crop is stressed. Weeds  
  can emerge through soil cracks.
- Use only on established crop during the winter months.
- Use only on established crop during winter months  
  after grazing or cutting.
- Will leach below germinating weed seed with water  
  leaving sensitive weeds uncontrolled.
- Do not apply if temp. exceeds 70°F. Contact  
  activity only will control small weeds.
- Use Raptor where soil residual needs to be minimized.
- Multiple apps. often required. Check current  
  registration. Use w/ roundup ready varieties only.
- Controls some weeds pre, post and some both.  
  Multiple applications often needed.
<table>
<thead>
<tr>
<th>Era</th>
<th>Herbicides</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960’s</td>
<td>Eptam, Balan, Chem Hoe, Dinoseb, 2, 4-DB</td>
</tr>
<tr>
<td>1970’s</td>
<td>Treflan EC, Tolban, Sencor, Gramoxone</td>
</tr>
<tr>
<td>1980’s</td>
<td>Buctril, Trifluralin 10G, Kerb, Poast</td>
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<tr>
<td>1990’s</td>
<td>Zorial, Select/Prism, Pursuit</td>
</tr>
<tr>
<td>2000’s</td>
<td>Raptor, RR Alfalfa, Prowl H2O, Velpar (Alfamax), Chateau, Select Max, Sandea</td>
</tr>
</tbody>
</table>
Eptam
Balan
Chem Hoe
Dinoseb
2, 4-DB

1960’s
Treflan EC
Tolban
Sencor
Gramoxone

1970's

Treflan EC
Gramoxone

Sencor

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1980's

Treflan TR10
Poast
Buctril
Kerb

Treflan TR10
Buctril
Poast
Solicam/Zorial

Pursuit

Zorial

Select/Prism

1990’s

Select/Prism
Raptor
RR Alfalfa
Prowl H2O
Velpar (Alfamax)
Chateau
Select Max
Sandea
Solicam

2000's
Roundup 3 applications
Confirmed Glyphosate Resistant Weeds in the U.S.

- Horseweed (Marestail)
- Common Ragweed
- Giant Ragweed
- Palmer Amaranth
- Common Waterhemp
- Hairy Fleabane
- Italian Ryegrass
- Rigid Ryegrass
Untreated

Velpar (0.6 lbs.) +
Karmax (1.5 lbs.)

Holtville, 2006
Velpar applied when 6-10” of crop growth

Velpar applied after sheeping

2007
Fall application 6 months later
Chateau

- Registered on alfalfa in 2008
- New mode of action for alfalfa
- Broad spectrum of broadleaf and grasses controlled
- Good crop safety
- Short rotational intervals
Thank You